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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,775	04/17/2001	Joseph S. Elder	M-5631-1P US	8958

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EXAMINER

TRAN, PABLO N

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,775

Applicant(s)

ELDER ET AL.

Examiner

Pablo N Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 21-25 is/are allowed.
- 6) ☐ Claim(s) 1-11 and 14-20 is/are rejected.
- 7) ☐ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments filed 10/24/02 have been fully considered but they are not persuasive.

The Applicant stated that it would not be obvious to combine the teachings of *Biehl* and *Tanaka*, because *Biehl* teaches a "spread spectrum transmitter". *Biehl* disclosed a highly IC designed to include all functional blocks for various spread spectrum or FM transmitters (see pg. 309/2nd paragraph, pg. 309/conclusion). Therefore, the Applicant argument's is irrelevant. Since, both *Biehl* and *Tanaka* disclosed radio transmitter, it would have been obvious to one of ordinary skill in the art to provide an antenna forming part of a resonant network as disclosed in *Tanaka et al.* to the transmitter of *Biehl* to reduce loss of energy of circuitries within the oscillation group and to improve emitting efficiency (see *Tanaka et al.*, col. 1/ln. 56-61).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-10, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Biehl* (document "A Fully-Integrated 900Mhz spread spectrum transmitter") in view of *Tanaka et al.* (6,061,550).

As per claims 1 and 20, *Biehl* disclose a transmitter comprising: generating an oscillating frequency with an oscillator within a PLL; modulating said oscillating frequency to create a modulated signal (see fig. 1, pg. 308-309);

Biehl disclosed coupling the modulated signal to an antenna (fig. 1) but do not disclose said antenna forming part of a resonant network with and to automatically tuned a resonant frequency of said resonant network to the oscillating frequency. However, such transmitter includes an antenna forming part of a resonant network to automatically tuned a resonant frequency of said resonant network by the PLL to the

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transmit frequency is well known in art, as disclosed in *Tanaka et al.* (see fig. 1, col. 2/ln. 37-45). Therefore, it would have been obvious to one of ordinary skill in the art to provide an antenna forming part of a resonant network as disclosed in *Tanaka et al.* to the transmitter of *Biehl* to reduce loss of energy of circuitries within the oscillation group and to improve emitting efficiency (see *Tanaka et al.*, col. 1/ln. 56-61).

As per claim 4, *Biehl* disclosed a power amplifier coupled between the VCO and antenna (see fig. 1/item output amplifier).

As per claim 5, *Biehl* disclosed the gain of the power amplifier is controlled by a power controller (see fig. 1/item amplifier control).

As per claim 6, *Biehl* disclosed the power amplifier, VCO, and power controller are formed on a single integrated circuit (see fig. 1).

As per claim 7, *Biehl* disclosed a prescaler and a divider coupled between the oscillator and the PLL (see fig. 1, pg. 308).

As per claim 8, *Biehl* disclosed the VCO and PLL are formed on a single IC (see fig. 1).

As per claim 9, *Biehl* disclose a differential structure of varactor diodes (see (fig. 1, pg. 309, col. 1, 4th paragraph) for tuning a resonance point of the antenna to the frequency of the oscillator.

As per claim 10, *Biehl* disclose an array of capacitors (see fig. 1) that can be switched in and out of the tune circuit.

As per claim 14, *Biehl* disclose a reference oscillator (see fig. 1) formed on the single monolithic chip (see fig. 1).

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As per claim 15, *Biehl* disclosed the reference is coupled to receive a signal from a timing device (see specification, page, 7, line 13-14, such timing device comprises crystal (see fig. 1)) external to the single monolithic chip but do not specifically disclosed the reference oscillator is of the Colpitts variety type. However, such Colpitts type reference oscillator is well known in the art, as disclosed by *Tanaka et al.* (see col. 2/ln. 16-17). Therefore, it would have been obvious to one of ordinary skill in the art to provide a Colpitts type reference oscillator as disclosed in *Tanaka et al.* to the reference oscillator of *Biehl* to provide a highly stable reference frequency for the transmitter device.

As per claim 16, *Biehl* disclose a charge pump (see fig. 1) formed on the single monolithic chip.

As per claim 17, *Biehl* disclose a bandgap reference circuit (see pg. 309, col. 2, 3rd paragraph) formed on the single monolithic chip for generates reference voltage that are temperature and supply voltage stable (fig. 1, pg. 308-309).

As per claim 18, *Biehl* disclose a shutdown mode circuit formed on the single monolithic chip and coupled to the oscillator (see fig. 1, pg. 308).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Biehl* (document "A Fully-Integrated 900Mhz spread spectrum transmitter") in view of *Tanaka et al.* (6,061,550) and further in view of *McClellan et al.* (5,612,648).

As per claim 2, the modified *Biehl* transmitter device, as stated in claim 1, disclose the VCO is serially coupled to the phase detector (see fig. 1) but do not specifically disclosed loop filter coupled between the phase detector and the oscillator to form a PLL. However, such a loop filter coupled between the phase detector and the oscillator to form a PLL is well known in the art, as disclosed in *McClellan et al.* (see fig. 4/no. 40, col. 9/ln. 1-2). Since, both the modified *Biehl* transmitter device and *McClellan et al.* disclose PLL devices. Therefore, it would have obvious to one of ordinary skill in the art to provide a loop filter coupled between the phase detector and oscillator of *McClellan et al.* to the PLL of the modified *Biehl* transmitter device to increase the control range of the transconductor elements within the filter and provide a desired frequency response for the filter and to also remove/prevent unwanted spurious noise.

As per claim 3, *Biehl* disclose the phase detector is coupled to a reference signal (see fig. 1).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Biehl* (document "A Fully-Integrated 900Mhz spread spectrum transmitter") in view of *Tanaka et al.* (6,061,550) and further in view of *Rieger et al.* (5,850,595).

As per claim 11, the modified *Biehl* transmitter device, as stated in claim 1, disclose such tuning circuit (see fig. 1) but do not specifically disclose such arrangement of the tuning circuit formed on a single integrated circuit. *Rieger et al.* disclose such an

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arrangement of the tuning circuit formed on a single integrated circuit (see fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art to apply the teaching of an arrangement of the tuning circuit formed on a single integrated circuit as discussed in *Rieger et al.* to the modified *Biehl* IC transmitter device to reduce interference in tune circuits in integrate circuits.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Biehl* (document "A Fully-Integrated 900Mhz spread spectrum transmitter") in view of *Tanaka et al.* (6,061,550) and further in view of *Yamanaka* (54,027,242).

As per claim19, the modified *Biehl* transmitter device, as stated in claim 1, does not disclosed a data encoder coupled between a data input and the oscillator and being formed on a single integrated circuit. *Yamanaka* disclosed such data encoder coupled between a data input and the oscillator and being formed on a single integrated circuit (see fig. 2/ no. 33, 37, 35, col. 7/ln. 41-43). Therefore, it would have been obvious to one of ordinary skill in the art to provide a data encode formed on a single IC as discussed in *Yamanaka* to the modified *Biehl* IC transmitter device to reduce fabrication cost.

Allowable Subject Matter

8. Claims 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Regarding claim 12-13, Biehl (document "A Fully-Integrated 900Mhz spread spectrum transmitter"), *Tanaka et al.* (6,061,550), and *McClellan et al.* (5612,648), in combination or individually, fail to disclosed a transmitter includes associated circuitry of an oscillator forming part of a PLL, a modulator, a resonant network wherein part of the resonant network of the oscillator being completed by an antenna, formed external to the single monolithic chip, to automatically tuned a resonant frequency of said resonant network by the PLL to the transmit frequency, and a differential structure of varactor diodes, wherein the transmitter further comprises a varactor charge pump formed on the single monolithic chip to provide bias charge for varactor diodes in the differential structure of varactor diodes.

9. Claims 21-25 are allowed.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sommer et al. (4,308,508), Keller et al. (4,587,497), Shimoda (5,373,257), Bickley (5,151,005), Debois et al. (3,882,424), Kovacs et al. (5,495,512), Issa et al. (5,534,845), Hagisawa et al. (5,689,814), Mittel et al. (5,789,987), Shirazi et al. (5,408,202), Silvian (4,947,407), Pickering et al. (5,050,194, and Zuckerman (5,802,463) disclose radio communication transmitter's circuitry.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (703)308-7941.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)


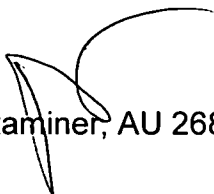
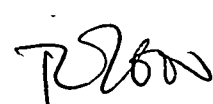
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

January 24, 2003

Pablo Tran

Examiner, AU 2684



1/27/03